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10/756,087	01/13/2004	Frederick Wienert Sturm	007343.00005	3078

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EXAMINER

WOOD, DAVID L

ART UNIT	PAPER NUMBER
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4194

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03/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/756,087	Applicant(s) STURM ET AL.	
	Examiner David L. Wood	Art Unit 4194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2004 and 23 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50, 51-53, 55-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1-50, 52-53, and 55-62 are pending in the application, and are examined.
Claims 51 and 54 are cancelled by preliminary amendment.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 56-62 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The basic form of the equation used in claim 49 is presented in the specification beginning at page 9. However, the equation selects a minimum value from the price vector of basket members. There is no discussion in the original specification or claims of the concepts of averages, means, geometric means, harmonic means, percentiles, or trimmed values.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1, 2, 7-9, 56, 58, 60, and 62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claim 1 refers to “preserving the price dynamics” but does not disclose how to determine whether price dynamics are preserved or not.
7. Claim 2 refers to providing “the convenience of cash settlement and the clarity of cash-futures spreading relationships” without disclosing how much convenience or how much clarity is required.
8. Claim 7, and others, refer to a “conversion-factor-weighted price” without disclosing the conversion factor or how it is derived or applied.
9. Claims 8 and 9 refer to "highly extreme market conditions" without providing a method to determine the scope and bounds which would characterize or not characterize a market as being “highly extreme.”
10. Claims 56, 58, 60, and 62 describe price determination using a “percentile” of a price vector, without explaining whether the percentile is used to select vector members above, below, or at the percentile level, and by which definition percentile is determined.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-50, 52-53, and 55-62 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. All claims refer to a “financial

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instrument,” which does not fall within a statutory category, since it is neither a composition of material, a process, a machine, nor a manufacture. A financial instrument is generally regarded as a legal document, which is *per se* unpatentable. See MPEP § 2105(IV)(B).

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1, 2, 4-10, 14, 15, 19, 24, 29, 30, 34, 35, 39, 44, 49, 50, 52, 53, 55, and 56 are rejected under 35 U.S.C. 102(e) as being anticipated by Burns, et al., U.S. Pat. No. 7,337,136.

14. As to claim 1, Burns discloses (abstract):

- *A financial instrument comprising a futures contract that enables cash settlement while simultaneously preserving the price dynamics of a physical-delivery futures contract.*

15. As to claim 2, Burns, et al., discloses (column 5, lines 4-22):

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- *A financial instrument comprising a futures contract that provides the convenience of cash settlement and the clarity of cash-futures spreading relationships.*

16. As to claims 4 and 5, Burns, et al., discloses (column 3, lines 31-40 and column 4, line 54 to column 5, line 3):

- *A financial instrument comprising a futures contract that references a basket of securities corresponding to a deliverable basket for a corresponding physical-delivery futures contract foreign government debt instrument.*
- *The financial instrument of claim 4 further wherein the basket of securities is identical to the deliverable basket for a corresponding physical-delivery futures contract.*

17. As to claim 6, Burns, et al., discloses (column 7, lines 20-34 and column 9, line 65 to column 10, line 5):

- *A financial instrument comprising a futures contract that is cash settled and obeys the same schedule for last trading day and expiration as a corresponding physical-delivery futures contract.*

18. As to claims 7 and 8, Burns, et al., discloses (column 10, lines 34-51):

- *A financial instrument comprising a futures contract that converges to a final settlement value equal to a conversion-factor-weighted price of whichever cash issue is cheapest to deliver into a corresponding physical-delivery futures contract.*

- *The financial instrument of claim 7 further wherein, in highly extreme market conditions, prices of the futures contract and the corresponding physical-delivery futures contract prices diverge.*

19. As to claim 9, Burns, et al., discloses the limitations of claim 7, and further discloses (column 5, lines 4-22):

- *The financial instrument of claim 7 further wherein, in highly extreme market conditions, the futures contract of the present invention expires at a price level that minimizes unresolved cash-futures arbitrage opportunities.*

20. As to claims 10 and 30, Burns, et al., discloses (abstract):

- *A financial instrument comprising a futures contract that is cash-settled and mirrors a physical delivery mechanism utilized to settle a corresponding physical-delivery futures contract.*

21. As to claims 14 and 34, Burns, et al., further discloses (column 10 lines 23-41, “cheapest to deliver” satisfying this limitation, as pointed out on page 7 of the specification):

- *The financial instrument of claim 10 further wherein settlement price determination assures that the futures contract must expire at a price for which the minimum (notional) cash-futures basis is zero among issues in a deliverable basket for a corresponding physical-delivery futures contract.*

22. As to claim 15, Burns, et al., discloses the limitations of claims 10 and 14, and further discloses (column 10, lines 23-41 and column 7, line 44 to column 8, line 67):

- *The financial instrument of claim 14 further wherein settlement prices (S) are determined in accordance with:*

$$S = Z \times (\text{minimum}\{P_i/c_i \dots P_N/C_N\}),$$

Where: Z is a currency denomination price basis (in points); N is a number of securities issues in a contract reference basket; P_i , $i = 1$ to N , are market prices of each security in the contract reference basket at the time contract expiration; and c_i , $i = 1$ to N , are conversion factors, where each c_i is a price at which the corresponding government security yields a given percentage to maturity.

23. Claims 19, 24, 29, 35, 39, 44, and 49 are rejected using the same reasoning as claim 15.

24. Claim 56 is rejected using the same reasoning as claim 15, because a percentile of 'zero' yields the same result.

25. As to claims 50, 52, and 53 Burns, et al., further discloses (column 10, lines 23-41):

- *The financial instrument of claim 10 further wherein settlement price of the futures contract is a non-minimum price of conversion-factor-weighted prices for members of the deliverable basket.*
- *The financial instrument of claim 10 wherein the non-minimum price is a mean of conversion-factor-weighted prices for members of a deliverable basket.*

26. As to claim 55, Burns, et al., discloses the limitations of claim 30, and further discloses (column 10, lines 23-41):

- *The financial instrument of claim 30 wherein the non-minimum price is a mean of conversion-factor-weighted prices for members of a deliverable basket.*

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

29. Claims 3, 12, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns, et al, U.S. Pat. No. 7,337,136, in view of Burns, U.S. Pat. Appl. Publication No. 2003/0004852 ("Burns '4852").

30. As to claims 3, 12, and 32:

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- Burns, et al., discloses a futures contract (abstract), but does not disclose that contract having different tick sizes from the physical-delivery futures contract to which it corresponds.
- Burns '4852 discloses a conversion factor required because of different tick sizes in the various futures contracts being compared (Burns '4852 paragraph 0054).
- It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the futures contract of Burns, et al., with the different tick size of Burns '4852, because each would perform the functions in combination that they performed before combination, with predictable results, and because futures contracts often use different tick sizes when the underlying currencies or other variables of the commodity are different. Having one commodity in German currency, and another trading in US dollars, it would be easily possible to require different tick sizes.

31. Claims 13 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns, et al, applied to claim 10, above, in further view of Kawaller, et al., "Cash-and-Carry Trading and the Pricing of Treasury Bill Futures," The Journal of Futures Markets, Summer 1984.

32. As to claims 13 and 33:

- Burns, et al., discloses the limitations of claim 10, but does not disclose the concept of using the implied repo rate for price determination.
- Kawaller discloses (page 116):

- *The financial instrument of claim 10 further wherein settlement price determination assures that the futures contract will expire at a conversion-factor-weighted price of whichever issue has the highest instantaneous implied repurchase agreement rate among issues in a deliverable basket for a corresponding physical-delivery futures contract.*
- It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the futures contract of Burns, et al., with the arbitrage-related use of considering the repurchase rate for pricing, suggested by Kawaller, because each would perform the functions in combination that they performed before combination, with predictable results, and because considering the repo rate helps remove price squeezes accounting for price differences between cash settlement and physical delivery.

33. Claims 11, 16, 17, 20, 21, 25, 26, 31, 36, 37, 40, 41, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns, et al, U.S. Pat. No. 7,337,136, applied to claim 10, above, in further view of Kharouf, "Exchanges put on new game faces," Futures, Vol. 27, Issue 10, October 1998, pages 86-90.

34. As to claim 11:

- Burns discloses the limitations of claim 10, but does not disclose using EFP for settlement.
- Kharouf discloses using an off-exchange EFP process (in the section titled "Eurex and Project A"):

- *The financial instrument of claim 10 further wherein Exchange Futures for Physical (EFP) transactions are permitted.*
- It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the futures contract of Burns to include an EFP process suggested by Kharouf, because each would perform the functions in combination that they performed before combination, with predictable results, and because using an EFP would open up additional settlement flexibility which would tend to increase the desirability of trading in the futures contract, and because EUREX already permits this.

35. As to claims 16-17/20-21/25-26:

- Burns, et al., discloses the limitations of claim 10.
- Burns does not disclose, but Kharouf discloses:
 - *The financial instrument of claim 10 further wherein the futures contract utilizes as its corresponding physical-delivery futures contract a bond futures contract based on a (long-term/medium-term/short-term) debt instruments issued by the Federal Republic of Germany.*
 - *The financial instrument of claim 16/20/25 further wherein the futures contract utilizes as its corresponding physical-delivery futures contract a bond futures contract based on (Bundesanleihen (Bunds)/ Bundesobligationen (Bobs)/ Bundesschatzanweisungen (Schatz)) issued by the Federal Republic of Germany*

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- It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the futures contract of Burns to apply to the German debt instruments, because each would perform the functions in combination that they performed before combination, with predictable results, and because the German bond futures were already widely traded at the time of the invention.

36. Claim 31 is rejected using the same reasoning as claim 11.

37. Claims 36-37, 40-41, and 45-46 are rejected using the same reasoning as claims 16-17/20-21/25-26, above.

38. Claims 18, 23, 27, 28, 38, 42, 43, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns, et al, applied to claims 10 and 16, above, in further view of Official Notice.

39. As to claim 27, 42, and 47:

- Burns, et al, discloses the limitations of claim 10, and discloses a basket of securities (Freddie Mac and Fannie Mae conventional MBS, three coupons), but does not disclose a basket composed of German debt securities futures.
- The examiner takes official notice that it is customary in the financial world to bundle items for trading, to distribute risk, as Burns discloses, and the largest markets for interest rate futures at the time was in German Bunds, Bobls, and Schatz contracts.
- It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bundling approach of Burns, et al., by applying it to the

three dominant, German short, medium, long-term debt securities, because each would perform the functions in combination that they performed before combination, with predictable results, and because distributing risk in the largest market for interest rate derivatives would be of value to many market participants.

40. As to claims 18, 23, 28, 38, 43, and 48:

- Burns, et al., and Kharouf, disclose the limitations of claims 10, 16, 22, and 27, but do not disclose different tick sizes.
- The examiner takes official notice that futures contract tick sizes are chosen, and changed, based on volatility, time to expiry, trading volume, the tick size of the underlying security/commodity, history, and other factors, and are generally set in the range of portions of a percent or 1/32 or a percent.
- It would have been obvious to one of ordinary skill in the art at the time of the invention to set a tick size in the futures contract of Burns to adjust to the various factors noted in Official Notice, because each would perform the functions in combination that they performed before combination, with predictable results, and because it would compensate for factors to improve trading acceptance of the futures contract.

41. Claims 57-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns, et al, applied to claim 10, in further view of Lent, "Effects of Extreme Values on Price Indexes: The Case of the Air Travel Price Index."

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42. As to claims 57-61:

- Burns discloses the limitations of claim 10, and discloses the general pricing formula of claim 15, duplicated substantially in claims 56-62, but does not disclose the use of calculations based on the Pythagorean means in establishing a single value to describe a basket of futures contracts using arithmetic, geometric, and harmonic means.
- Lent does disclose the use of arithmetic, geometric, and harmonic means (Lent abstract).
- It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the price technique for a bundle of futures contracts of Burns, et al., with the calculation concepts of Lent, because each would perform the functions in combination that they performed before combination, with predictable results, and because additional statistical techniques are applied to complex pricing problems to eliminate the effects of outlying values in improperly skewing results of the calculations.

43. As to claims 58, 60, and 62, Burns further discloses the concept of trimming outlying values out of the price calculation (column 7, lines 35-42).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure because it discloses additional embodiments of various components of the invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Wood whose telephone number is (571)270-3607. The examiner can normally be reached on Monday through Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Kyle can be reached on 571-272-6746. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://www.uspto.gov/ebc/index.html>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David L. Wood/
Examiner, Art Unit 4194
March 25, 2008

/Charles R. Kyle/
Supervisory Patent Examiner, Art Unit 4194